

## Remarks

### I. Response to Advisory Action

The Advisory Action of September 26, 2005 states that the Amendment to the Claims will not be entered, because the “proposed amendments to the claims raise new issues, and as such, would require the Examiner to further consider the outstanding rejection and/or perform additional searching. As such, the proposed amendments to the claims will not be entered.” In a September 29, 2005 telephone conversation with applicant, Examiner Klimowicz stated that he believed that the Amendment to the Specification and Drawings was also not entered, because it is not possible to enter part of an Amendment.

Submitted herewith is an Amendment to the Specification and Drawings that is responsive to the Objections of the Final Rejection, and identical to the Amendment to the Specification and Drawings filed September 6, 2005. An Amendment to the Claims is also submitted herewith, but only claim 25 is being amended, as required by the Final Rejection.

### II. Response to Objections of Final Rejection

#### A. The Specification

Page 2 of the Final Rejection notes some informalities in the specification with regard to reference element numbering.

In response, applicant has amended paragraph [0060] to replace “gate electrode 215” with “gate electrode 225.”

Applicant has amended paragraph [0065] to replace “wires 342 and 344,” with “wires 357 and 366.”

Applicant has also amended paragraph [0067] to label one “major surface” of the “wafer substrate” with the reference numeral “401” and to label another “major surface” of the “wafer substrate” with the reference numeral “402.”

Similarly, applicant has amended paragraph [0068] to label “opposite surface” with reference numeral “402.”

B. The Drawings

The Final Rejection beginning on page 2 also notes some informalities in the drawings. Applicant respectfully asserts that the amendment to paragraph [0065] mentioned above has overcome the objection to reference designators 342 and 344.

A replacement for sheet number seven of the drawings, labeled "Replacement Sheet 7/14," is also submitted herewith, which has been amended to contain in FIG. 19 reference numeral 360.

A replacement for sheet number eight of the drawings, labeled "Replacement Sheet 8/14," is also submitted herewith, which has been amended to contain in FIG. 20 reference numerals 401 and 402, with reference numeral 401 pointing to a dashed line indicating one major surface of the wafer substrate, and reference numeral 402 pointing to another major surface of the wafer substrate, as described for example in paragraph [0067] the specification. No new matter has been added.

Applicant respectfully disagrees with several aspects of the Examiner's reasoning in this objection, as discussed below, but offers this amendment to FIG. 20 in an effort to expedite the already extended prosecution of this application. In short, applicant respectfully but strongly disagrees with the Final Rejection allegation that the application as originally filed has insufficient support for the limitation "wherein no part of said substrate is disposed further than said transducer from said actuator."

As discussed and depicted in various parts of the application and drawings, a transducer can be formed atop a major surface of a wafer substrate after an actuator has been formed atop the opposite major surface of the substrate, so that "no part of said substrate is disposed further than said transducer from said actuator." For example, the "SUMMARY OF THE INVENTION" on page 4 states, in part:

In accordance with the present invention integrated head, flexure, gimbal and/or actuator devices formed on and from a wafer substrate are disclosed. Conventional problems of connecting the head to the flexure and/or gimbal are reduced or eliminated, as all of these elements may be made on and from the same wafer on which the transducer is formed... Additionally, *a microactuator may be formed on an end of the structure furthest from the transducer layers.* (emphasis added)

More detailed explanations of the formation and operation of an actuator on an opposite side of a substrate from a transducer can be found in paragraphs [0067]-[0069], [0072]-[0076] and [0078]-[0082]. For instance, original paragraph [0067] states, in part:

FIG. 20 shows a device 400 including a piezoelectric layer 404 that may be employed to help position the device. Much of device 400 is like device 30 shown in FIG. 1, and so for brevity substantially similar elements will not be renumbered or discussed at this point. Much as above, device 400 is formed on and from a wafer substrate, but prior to formation of head elements on a major surface of the wafer, a conductive layer 408 is formed on a major surface of the wafer. The conductive layer 408 may be formed of a metal or conductive ceramic that adheres well to the wafer and to the piezoelectric layer 404 that is formed atop the conductive layer...

Applicant respectfully asserts that one of ordinary skill in the art would understand what a major surface of a wafer substrate is, and would understand from FIG. 20 that the head elements are formed atop an opposite major surface from the “piezoelectric layer 404 that is formed atop the conductive layer.” Moreover, FIG. 3 explicitly depicts an embodiment of “head 33” in which “transducers 40 and 44” are formed in multiple layers atop the “wafer substrate 100.” See paragraphs [0045] – [0047]. Applicant respectfully asserts that one of ordinary skill in the art would not view FIG. 20 in isolation, especially because the text quoted above references earlier portions of the application, but states that “for brevity substantially similar elements will not be renumbered or discussed at this point.”

The Final Rejection, however, ignores the remainder of the application to instead focus only on FIG. 1, which depicts transducer layers disposed atop a wafer substrate, albeit with less detail than the example shown in FIG. 3, and does not depict an actuator formed on an opposite end of the substrate, unlike FIG. 20. In this regard, the Final Rejection on page 3 states:

FIG. 1 clearly shows wherein the head (33) and substrate layer and the rear portion of pad (50) itself, *extend beyond* the transducer layers (40) and (44). That is, the transducer layers appear to be formed on and within the substrate.

The Final Rejection thus focuses on particular elements that may be called a “substrate” in a given context to argue that those elements “*extend beyond* the transducer

layers (40),” while choosing to ignore the text and drawings that provide support for the limitation “wherein no part of said substrate is disposed further than said transducer from said actuator.”

In addition to choosing to ignore the teachings of the present application, the Examiner also chooses to ignore the teachings of several patents that he has recently issued as the Primary Examiner. For example, U.S. Patent No. 6,842,317 states, in column 11, lines 28-54:

*In the MR element shown in FIG. 9, a lower electrode 503, a MR element 505 and an upper electrode 502 are laminated on a substrate 504 in this stated order....*

FIG. 10 shows one example of a *magnetic head utilizing the MR element* of the present invention. (emphasis added)

As another example, U.S. Patent No. 6,657,827 states, in column 3, lines 14-24:

FIG. 1 shows a bottom view of a *head 1* according to a first embodiment of the present invention. The *head 1 includes a head chip 2 having an MR element. The head chip 2 includes first and second external connection electrodes 2a and 2b* for establishing connection with an external circuit. In this embodiments, though the MR element is used as the head chip 2, another reading-writing element, such as a magneto-optical reading-writing element, can be used.

The *head chip 2 is mounted on a substrate 3*. (emphasis added)

In brief, the Final Rejection’s argument regarding a “substrate” and “transducer layers,” while reasonable in some situations, ignores explicit teachings of the present application as well as ignoring many recent patents the Examiner has issued, in order to allege that the application is somehow deficient. Building upon and extending this flawed reasoning, the Final Rejection on page 3 states:

If there is no new matter, the Applicant must present all such FIGs analogous to FIG. 1 clearly and unambiguously disclosing that the substrate can have no portion beyond the layer (44) (e.g., showing layers (44 and (44) formed on a dotted line, wherein the dotted line indicates the end of the substrate with the transducers layers formed within a protection layer.

Applicant is unaware of any requirement in U.S. patent law to update all “analogous” figures to show a limitation recited in a dependent claim. Indeed, applicant is unaware of any requirement that all the limitations of a claim be depicted in a single

drawing, as the Final Rejection is apparently requiring of applicant despite the original application teaching in various places the limitation “wherein no part of said substrate is disposed further than said transducer from said actuator,” as discussed above. Although the original application clearly provides adequate support for this limitation to one of ordinary skill in the art, applicant has added a dotted line 401 to FIG. 20 to indicate a major surface of the substrate as described in original paragraph [0067].

The Final Rejection continues with questions that would make little sense to one of ordinary skill in the art, stating on page 3:

How this affects lead layer (56-59) is, however, unclear. Are these layers (56-59) to be also within the protective layer formed on the substrate? This would seem to be *inconsistent* with applicants own disclosure in paragraph [0044], wherein it is specifically stated “leads 56, 57, 58 and 59 [are] disposed *in* gimbal elements 35.”

A brief review of the application reveals no inconsistency in describing that the “lead layers (56-59)” are formed atop the substrate along with the transducer layers, and are also located within the “protective coating 127” as described in paragraph [0047]. In fact, the sentence in paragraph [0044] immediately following that quoted by the Final Rejection states:

As will be explained in more detail below, *transducer leads 56, 57, 58 and 59 can be defined during formation of transducers on a wafer* to provide guidance during row bar processing for the formation of gimbals 35 and flexures 38 of a desired thickness. (emphasis added)

No inconsistency is found in paragraph [0048], which in part states:

FIG. 5 shows row 140 cut from the *substrate 100*, with the recently formed inductive transducer 40 and *leads 56 and 58 visible through the transparent protective coating*. (emphasis added)

Paragraphs [0050] and [0051] then describe the use of conductors 56-59 as etch stops that can help define the thickness of the gimbals, again consistent with all other descriptions and drawings. In short, applicant cannot find the inconsistency to which the Final Rejection alludes, and respectfully requests an understandable explanation if the Examiner actually believes that there is such an inconsistency after reading the application.

C. The Claims

The Final Rejection on page 4 objects to claim 25, stating:

With regard to claim 25 (line 3), the word --piece-- should be inserted after the word "substrate" for claim consistency.

Appropriate correction is required.

Applicant has amended claim 25 in the manner required by the Examiner.

III. Conclusion

Applicant has responded to the Advisory Action and the Final Rejection by amending the application to place the application in better condition for Appeal. As such, applicant respectfully requests entry of this Amendment.

Respectfully submitted,

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: MS AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on September 30, 2005.

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